

MISS HOWARD

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1971 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 1

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

R W Blacker
G C Bolster
V Bye
R F Lincoln
R J Turner
Miss G A Pull
Mrs G E Howlett
R A Bray (British Museum, Natural History)

DURATION

Left Grimsby 1922 hours 30 December

Arrived Grimsby 1010 hours 19 January

All times are British Standard Time

LOCALITY

Bay of Biscay, to Morocco

AIMS

1. To test the main trawl winch.
2. To collect material for blood group and chromosome analysis of hake stocks and species.
3. To study the meristic characters of hake stocks and species.
4. To collect pineal tissue from deep-sea fish.
5. To make electrophysiological studies of the pineal system in deep-sea fish and measure the penetration of light through fish skulls.
6. To collect muscle samples from deep-sea fish.
7. To collect elasmobranch brains for neuro-secretory cycles (Professor Dodd, Bangor University).
8. To collect otoliths of various fish (Dr Fitch, California).

NARRATIVE

The ship left Grimsby at 1922 hours 30 December and, after a good passage through the English Channel, reached deep water in north Biscay on 1 January. Stretching the trawl warps began at 1500 hours 1 January and was completed by 1710 hours; 5 baskets of hake and a large selection of deep-sea fishes were caught in the process. During the next 8 days various grounds on the edge of the continental shelf around the Bay of Biscay were fished:- Little Sole Bank, SE of Banc de la Chapelle, west of Bordeaux, off

Bayonne, and off Cape Busto (N. Spain). January 10 was spent fishing off Cabo Mondogo (Portugal). In most areas bottom temperature observations were made across the Continental slope from about 1000m to 150m on the shelf. Lisbon was entered on 11 January at 1125 hours so that hake blood samples could be flown back to Lowestoft, and two damaged trawl doors could be repaired. The door repairs took longer than was anticipated so the ship did not leave Lisbon until 0058 hours 13 January. Course was set for Cape Mazagan, near Casablanca. During the night of 13/14 January bottom temperature observations were made from deep water onto the shelf in 150m. Fishing was started off Cape Mazagan at first light and continued until 2200 hours. A camera lowering was then made in 150m in an attempt to photograph the coral zone. This was completed at 2400 hours 14 January and course was set for Grimsby. After a good passage with strong southerly winds in Biscay and the Channel the ship docked at Grimsby at 1010 hours 19 January.

RESULTS

1. The trawl winch worked well throughout the cruise. Thirty-four trawl hauls were made in depths ranging from about 60 to 560 fm. The hauling speed was good and the brake systems presented no problems. The damaging of two trawl doors by hauling them too far into the sheave may be attributed to lack of practice in the use of the winch.
2. & 3. Hake was caught on all grounds, but never in large quantities. One hundred and sixty (160) blood samples were obtained for blood group analysis and a further 79 were obtained for chromosome analysis. Otolith samples were taken and gill raker and vertebrae counts were made in all areas. Only Merluccius merluccius was encountered, because the delay caused by the door repairs prevented the sampling of the grounds where M. senegalensis might have been caught.
4. Pineal tissue was collected from about twelve deep-sea species for both light and electron microscopy.
5. Electrophysiological studies were made on four southern species of teleost. A technique for measuring light penetration of fish skulls was successfully tested.
6. Muscle samples were collected from about 25 species of deepsea fish for Dr Greer Walker.
7. Twenty samples from five species of deep water Elasmobranchs were obtained for Professor Dodd.
8. Otoliths from 11 species of unusual fish were collected for Dr Fitch.

Miscellaneous results: Morphometric measurements of eyes and material for studies of the histology of the retina were obtained from various deep-sea fish.

Horse Mackerel (Trachurus sp) were measured whenever caught and samples from Biscay, Portuguese coast, and Morocco were deep frozen for Mr Macer.

Forty-two (42) Mackerel (Scomber scombrus) were sampled for length, sex, maturity and otoliths. The majority of mackerel caught on Little Sole Bank were in maturity stage III-IV. Some S. scombrus were caught off the Portuguese coast, but off Morocco only S. colias (Spanish mackerel) were found.

Underwater cameras were used on the headline of the trawl at 15 stations.

Numerous photographs of fish and the seabed were obtained. One camera casing fitted with a new 1" thick perspex flash window was successfully pressure tested to a depth of 800m.

Mr Bray collected samples from 96 fish of various species for examination for Trematode parasites.

Observations were made on the state of maturity of several species of deep-sea sharks (Deania calceus, Centrophorus squamosus and Scymnodon ringens).

R W Blacker
20 January 1971

SEEN IN DRAFT: E A Binnington (Master)

G W Argumont (Fishing Skipper)

INITIALLED: HAC

DISTRIBUTION:

Basic List

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R A Bray (British Museum, Natural History)
R J Turner

